



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/650,604	08/30/2000	Thomas J. Krutsick	5	9105

7590 10/01/2002

Lucent Technologies Inc
Docket Administrator Rm 3C 512
PO Box 636
600 Mountain Avenue
Murray Hill, NJ 07974-0636

EXAMINER

SEFER, AHMED N

ART UNIT	PAPER NUMBER
----------	--------------

2826

DATE MAILED: 10/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/650,604

Applicant(s)

KRUTSICK, THOMAS J.

Examiner

A. Sefer

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 June 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. The amendment filed on 6/17/02 has been entered. Claims 1-27 have been cancelled and new claims 28-34 have been added.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka Kinoshita (JP 63-58955).

Kinoshita discloses in fig. 1 an integrated circuit having a field-plated resistor, the field-plated resistor comprising a resistor body 7 formed in a substrate 1, the resistor body having first and second contact regions, a first insulating layer 6 on the resistor body, the first insulating layer having a top surface and a bottom surface, with the bottom surface in contact with the resistor body, a contact window in the first insulating layer and extending from the top surface of the first insulating layer through the first insulating layer to the resistor body, a field plate 11 comprising polysilicon (as in claim 29) on the first insulating layer, the field plate having a top surface and a bottom surface, with a portion of the bottom surface extending through the contact window in the first insulating layer and into contact with the first

Art Unit: 2826

contact region of the resistor, a second insulating layer 12, the second insulating covering the field plate, an electrical contact to the top surface of the field plate, an electrical contact to the second contact region of the resistor, and metal conductors formed on the second insulating layer.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 28-31, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo US Patent No. 4,609,935 in view Tanaka Masahiro (JP 60-128651).

Kondo discloses in figs. 8 and 10 an integrated circuit having a field-plated resistor, the field-plated resistor comprising a resistor body 35 formed in a substrate, the resistor body having first and second contact regions, a first insulating layer on 33 on the resistor body, the first insulating layer having a top surface and a bottom surface, with the bottom surface in contact with the resistor body, a contact window in the first insulating layer and extending from the top surface of the first insulating layer through the first insulating layer through the first insulating layer to the resistor body, a field plate 39 comprising polysilicon (as in claim 29) on the first insulating layer, the field plate having a top surface and a bottom surface, a second insulating layer 42, the second

Art Unit: 2826

insulating covering the field plate, an electrical contact to the top surface of the field plate, an electrical contact to the second contact region of the resistor, and metal conductors formed on the second insulating layer but omits a portion of the bottom surface of the field plate extending through the contact window

Tanaka discloses in fig. 1 a field plate 7 with a portion of the bottom surface extending through a contact window in an insulating layer 3, 4 and into contact with a contact region of a resistor 2.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate Tanaka's teaching with Kondo's, since that would produce a resistor with less temperature coefficient.

As to claim 30, Kondo discloses first and second insulating oxide layers.

As to claim 31, the combined references disclose electrical contact to the top surface of the field plate, electrical contact to the second contact region of the resistor, and the metal conductors formed from a same layer.

As to claims 33 and 34, Kondo discloses a barrier layer 41.

6. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo in view of Tanaka as applied to claims 28 and 29 above, and further in view of Pfiester US Patent No. 4,948,747.

The combined references fail to disclose an insulative spacer around a field plate.

Pfiester discloses in fig. 7 an insulative spacer 28 formed around a field plate.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to use an insulative spacer around field plate, since that would provide a protection to the field plate resistor.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Eguchi (JP 62-27454) discloses a device having a polysilicon layer with its lower portion contacting a resistor body.

b. Nakauchi (JP 1-253950) discloses an IC which obtains a high resistance within a small area.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2826

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (703) 308-6601.

ANS

September 25, 2002

NATHAN J. FLYNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800